

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of      Jan WEBER et al.  
Group Art Unit:              Unassigned  
Application No.:              Unassigned  
Examiner:                      Unassigned  
Filed:                              Herewith  
Docket No.:                    **12013/51201**  
For:                                USING BUCKY PAPER AS A THERAPEUTIC AID IN  
   MEDICAL APPLICATIONS

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 CFR § 1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of each reference is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom. The filing of this Information Disclosure Statement and the enclosed PTO Form No. 1449, shall not be construed as an admission that the information cited is prior art, or is considered to be material to patentability as defined in 37 C.F.R. § 1.56(b). The paragraphs marked below are applicable. It is believed that no fees other than those indicated below are due, but authorization is hereby given to charge any additional fees due, or to credit any overpayment, to deposit account 11-0600.

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☐ 2. This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a final action, Notice of Allowance, or any action that otherwise closes prosecution.

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☐ c. Please debit Deposit Account No. 11-0600 in the amount of \$180.00 in payment of the fee under 37 CFR §1.17(p) to ensure consideration of the disclosed information. Two duplicate copies of this paper are attached. 37 CFR §1.97(c)(2).

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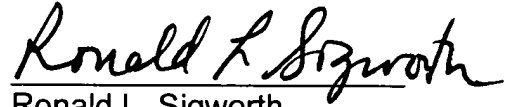
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Date: October 3, 2003

470707

Respectfully submitted,

KENYON & KENYON

A handwritten signature in black ink, reading "Ronald L. Sigworth". The signature is written in a cursive style with a horizontal line underneath the name.

Ronald L. Sigworth

Registration No. 53,592

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Sheet	1	of	5
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**Complete if Known**

Application Number	Unassigned
Filing Date	Herewith
First Named Inventor	Jan Weber et al.
Group Art Unit	Unassigned
Examiner Name	Unassigned
Attorney Docket Number	12013/51201

## U.S. PATENT DOCUMENTS

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## FOREIGN PATENT DOCUMENTS

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**OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		Baughman et al., "Carbon Nanotubes--the Route Toward Applications," Science, Vol. 297, 08/02/02; pp. 787-792.	
		"Carbon Nanotube Bucky Paper Scaffold for Retinal Cell Transplantation," <a href="http://ettc.usc.edu/ames/nano/TOA-AME_BuckyPaper6.pdf">http://ettc.usc.edu/ames/nano/TOA-AME_BuckyPaper6.pdf</a>	
		Antipov et al., "Sustained Release Properties of Polyelectrolyte Multilayer Capsules," J. Phys. Chem. B 2001, 105, 2281-2284.	
		Qiu et al., "Studies on the Drug Release Properties of Polysaccharide Multilayers Encapsulated Ibuprofen Microparticles," Langmuir 2001, 17, 5375-5380.	
		Decher et al., "Multilayer Thin Films," ISBN 3527304401, Chap. 13.2.1.2.	
		Hird et al., "Supramolecular Structures of Novel Carbohydrate-Based Phospholipids," J. Am. Chem. Soc., 2000, 8097-8098.	
		Brannon-Peppas, "Polymers in Controlled Drug Delivery," Medical Plastics and Biomaterials Magazine, originally published November 1997.	
		Byrne et al., "Use of Commercial Porous Ceramic Particles for Sustained Drug Delivery," International Journal of Pharmaceutics 246 (2002) 61-73.	
		Joschek et al., "Chemical and Physicochemical Characterization of Porous Hydroxyapatite Ceramics Made of Natural Bone," Biomaterials 21 (2000) 1645-1658.	
		Zhang et al., "Crystallization and Microstructure Analysis of Calcium Phosphate-Based Glass Ceramics for Biomedical Applications," Journal of Non-Crystalline Solids 272 (2000) 14-21.	
		Ausman et al., "Organic Solvent Dispersions of Single-Walled Carbon Nanotubes: Toward Solutions of Pristine Nanotubes," J. Phys. Chem. B, 2000 104, 8911-8915.	

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		Sreekumar, et al., "Single-Wall Carbon Nanotube Films," Chem. Mater. 2003, 15, 175-178.	
		Adriance-Mejia et al., "Alternative Formulations for the Anti-cancer Drug Paclitaxel (Taxol)," <a href="http://otc.isu.edu/~ndas/Term%20Papers%202002/Paclitaxel%20Formulations.pdf">http://otc.isu.edu/~ndas/Term%20Papers%202002/Paclitaxel%20Formulations.pdf</a>	
		Spinks et al., "Pneumatic Actuator Response from Carbon Nanotube Sheets," presented on the MRS Fall meeting 2001.	
		Liu et al., "Fullerene Pipes," Science, 280 (1998), 1253-1256.	
		Bos, "Albumin-Heparin Matrices Loaded with Growth Factor as Substrates For Endothelial Cell Seeding," Thesis - University of Twente, Enschede, The Netherlands.	
		Georgakilas et al., "Organic Functionalization of Carbon Nanotubes," J. Am. Chem. Soc. 124 (5) (2002), 760-761.	
		Chen et al., "Plasma Activation of Carbon Nanotubes for Chemical Modification," J. Phys. Chem. B 2001, 105, 618-622.	
		Pantarotto et al., "Synthesis, Structural Characterization, and Immunological Properties of Carbon Nanotubes Functionalized with Peptides," J. Am. Chem. Soc. 2003, 125, 6160-6164.	
		Dettlaff-Weglikowska et al., "Chemical Functionalization of Single Walled Carbon Nanotubes," Current Applied Physics 2 (2002) 497-501.	
		Bahr et al., "Functionalization of Carbon Nanotubes by Electrochemical Reduction of Aryl Diazonium Salts: A Bucky Paper Electrode," J. Am. Chem. Soc. 2001, 123, 6536-6542.	
		Chen, et al., "Cyclodextrin-Mediated Soft Cutting of Single-Walled Carbon Nanotubes," J. Am. Chem. Soc. 2001, 123, 6201-6202.	

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Examiner Name Unassigned

Attorney Docket Number 12013/51201

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		Chen et al., "Solution Properties of Single-Walled Carbon Nanotubes," Science, 1998, 282, 95-98.	
		Chen et al., "Dissolution of Full-Length Single-Walled Carbon Nanotubes," J. Phys. Chem. B 2001, 105, 2525-2528.	
		Sun et al., "Soluble Dendron-Functionalized Carbon Nanotubes: Preparation, Characterization, and Properties," Chem. Mater. 2001, 13, 2864-2869.	
		Bahr et al., "Dissolution of Small Diameter Single-Wall Carbon Nanotubes in Organic Solvents," Chem. Commun. 2001, 193-194.	
		Wong et al., "Covalently-Functionalized Single-Walled Carbon Nanotube Probe Tips for Chemical Force Microscopy," J. Am. Chem. Soc., 1998, 120, 8557-8558.	
		Holzinger et al., "Sidewall Functionalization of Carbon Nanotubes," Angew. Chem. Int. Ed., 2001, 40, 4002-4005.	
		Zhao et al., "Chromatographic Purification and Properties of Soluble Single-Walled Carbon Nanotubes," J. Am. Chem. Soc., 2001, 123, 11673-11677.	
		Chen et al., "Room-Temperature Assembly of Directional Carbon Nanotube Strings," J. Am. Chem. Soc., 2002, 124, 758-759.	
		Diehl et al., "Self-Assembled, Deterministic Carbon Nanotube Wiring Networks," Angew. Chem. Int. Ed., 2002, 41, 353-356.	
		Krashennikov et al., "Ion-Irradiation-Induced Welding of Carbon Nanotubes," Physical Review B 66, 245403 (2002).	
		Fisher et al., "Carbon Nanotubes Literature Review," Department of Mechanical Engineering, Northwestern University, February 21, 2001.	

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		Final Report, Nanotechnology Workshop: From the Laboratory to New Commercial Frontiers, Rice University, Houston, Texas, May 23, 2002.	
		Henry, "Special Delivery - Alternative Methods for Delivering Drugs Improve Performance, Convenience, and Patient Compliance," Chemical & Engineering News, Vol. 78, No. 38, 9/18/2000, pp. 49-65.	
		"Antibody Coated Stent A Breakthrough in Cardiovascular Treatment," ScienceDaily New Release, 5/22/2003.	
		Klein-Soyer et al., "CD9 Participates in Endothelial Cell Migration During In Vitro Wound Repair," Arterioscler Thromb Vasc Biol., February 2000, pp. 360-369 ( <a href="http://www.atvbaha.org">http://www.atvbaha.org</a> )	

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